

Patent claims

1. A plug-in connection apparatus which can be plugged into/onto a mating plug-in connection apparatus in order to electrically connect electrical modules, having

- a housing (16) and
- at least one locking device (17) which is connected to the housing (16) and serves to mechanically couple the plug-in connection apparatus to the mating plug-in connection apparatus,
- it being possible to move the locking device (17) between a locked position and an unlocked position,
characterized in that
- the locking device (17) is integrally connected to the housing.

2. The plug-in connection apparatus as claimed in claim 1, with the locking device (17) having a locking hook or a locking eye for the purpose of mechanical coupling to the mating plug-in connection apparatus.

3. The plug-in connection apparatus as claimed in either of the preceding claims, with the locking device (17) having an end (22) which is rigidly connected to the housing (16), as a result of which the locking device (17) is resiliently mounted on the housing (16).

4. The plug-in connection apparatus as claimed in one of the preceding claims, with the locking device (17) having an unlocking element (19) which, in the unlocked position, engages in a mating element (21) which is arranged on the housing (16) and complements the unlocking element (19), so that the locking device (17) can be fixed in the unlocked position.

5. The plug-in connection apparatus as claimed in one of the preceding claims, with the unlocking element (19) comprising an unlocking hook or an unlocking eye.
6. The plug-in connection apparatus as claimed in one of the preceding claims, with the unlocking element (19) and the mating element (21) engaging in such a way that the unlocking element (19) automatically disengages from the mating element (21) when the plug-in connection apparatus is inserted into the mating plug-in connection apparatus.
7. The plug-in connection apparatus as claimed in one of the preceding claims, with the locking device (17) being resiliently mounted on the housing (16) in such a way that it is prestressed toward the locked position, so that the locking device (17) automatically snaps into the locked position when the plug-in connection apparatus is inserted into the mating plug-in connection apparatus.
8. The plug-in connection apparatus as claimed in one of claims 2 to 7, with the free end of the locking hook (17) having an edge (20) which is inclined essentially in the direction of the insertion movement (A) of the plug-in connection apparatus into the mating plug-in connection apparatus.
9. The plug-in connection apparatus as claimed in claim 8, with the edge (20) directly adjoining a projection (18) of the locking hook (17), which projection engages on the connector in the locked position.
10. The plug-in connection apparatus as claimed in one of the preceding claims, with a respective locking device (17) being provided on two opposite sides of the housing (16).

11. A plug-in connection system having a plug-in connection apparatus as claimed in one of the preceding claims, which apparatus

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is in the form of a socket, and a mating plug-in connection apparatus which corresponds to a connector.

12. The plug-in connection system with a plug-in connection apparatus as claimed in one of claims 1 to 10, which apparatus is in the form of a connector, and with a mating plug-in connection apparatus which corresponds to a socket.

13. A method for disconnecting a plug-in connection apparatus as claimed in one of claims 1 to 9 from the mating plug-in connection apparatus by

- fixing the at least one locking device (17) in the unlocked position by means of the unlocking device, and
- releasing the plug-in connection apparatus from the mating plug-in connection apparatus.